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EXAMINER	
HIGGINS, GERARD T	

ART UNIT	PAPER NUMBER
1794	

MAIL DATE	DELIVERY MODE
11/12/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/594,096	OKUBO ET AL.
	Examiner	**Art Unit**
	GERARD T. HIGGINS	1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 October 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) *5,6 and 9-17* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7,8,18 and 19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submissions filed on 10/30/2009 and 10/15/2009 have been entered.

Response to Amendment

2. Applicant's amendment filed 10/15/2009 has been entered. Currently claims 1-19 are pending and claims 5, 6, and 9-17 are withdrawn.

Specification

3. The Examiner recognizes the corrected translation of the original International Application, which has been filed on 06/10/2009; further, it is noted that the specification amendments filed 04/24/2009 either show the same language as is in the 06/10/2009 specification or a correction thereof. Please note the discrepancy of section 3 below and the fact that the page and paragraph locations do not apply to the specification amendment filed 06/10/2009.

The Examiner requires applicants to ***refile*** the specification amendment from 04/24/2009 showing page and paragraph locations for the corrected translation of the International Application filed on 06/10/2009. Also please address the issue from section 3 below.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 19 recites the limitation "the at least two kinds of metal elements are Si and Ti" in the second line of the claim. There is insufficient antecedent basis for this limitation in the claim. Claim 2 does not recite these limitations. The Examiner will interpret this claim as depending from claim 18.

Claim 19 is also rendered indefinite because of the usage of the term “two ***kinds*** of metal elements.” Besides metal elements, it is unclear what “kinds of metal elements" are meant to include. This rejection will be removed if the limitation is changed to “wherein the at least two metal elements are Si and Ti.”

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 3, and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakai et al. (JP 10-309770), machine translation previously included, as evidenced by applicants' own admissions.

With regard to claim 1, Sakai et al. disclose a transparent electric conduction sheet, which reads on applicants' transparent conductive film, for display devices [0001]. The article is comprised of a gas barrier film, which reads on applicants' gas barrier layer, a hardenability resin sheet, which reads on applicants' transparent plastic film, and a conducting film, which reads on applicants' transparent conductive layer [0009]. The Examiner clearly envisages using the resin of Formula (2) by itself to form a sheet, as is suggested by Sakai et al. [0016]. Sakai et al. teach that such a sheet will have an index of refraction of 1.47-1.51 [0016]. The gas barrier film is formed from the inorganic oxides seen at [0032]. Sakai et al. teach that aluminum oxide may be used alone. As evidenced by applicants' own admissions aluminum oxide has a refractive index of 1.67 (page 22, lines 1-4). Sakai et al. also teach that the conducting film may be ITO [0031]. As evidenced by applicants' own admissions, ITO has an index of refraction of 2.05 (page 13, lines 25-27). Sakai et al. teach at [0048] that the order of

the layers is not limited and may be "a gas barrier film between a hardenability resin sheet and a conducting film."

This arrangement would then have the refractive index arrangement be the following: resin sheet (1.47-1.51), gas barrier film (1.67), and conducting film (2.05). This arrangement inherently satisfies applicants' limitations that the "refractive index is controlled so that the refractive index continuously or stepwise decreases from one of the two surfaces of the transparent conductive film having the transparent conductive layer to the other of the two surfaces of the transparent conductive film." The Examiner deems that the article of Sakai et al. meets the limitation that the "refractive index is controlled" because any resultant article that possesses the refractive index gradient claimed will necessarily have to have been controlled, i.e. manufactured, with said gradient.

With regard to claim 3, disclose an alternative layer structure wherein their resin sheet is between the gas barrier film and a conducting film [0048]. The Examiner clearly envisages forming the conducting film from ITO, which has a refractive index of 2.05, the resin sheet from the resin of formula (2), which has a refractive index of 1.54-1.65 [0016], and the gas barrier film from silicon oxide [0032], which has an index of refraction of 1.46 as evidenced by applicants' own admissions (page 22, lines 1-4).

This arrangement would then have the refractive index arrangement be the following: gas barrier film (1.46), resin sheet (1.54-1.65), and conducting film (2.05). This arrangement inherently satisfies applicants' limitations that the "refractive index is controlled so that the refractive index continuously or stepwise decreases from one of

the two surfaces of the transparent conductive film having the transparent conductive layer to the other of the two surfaces of the transparent conductive film" and that the "refractive index in the gas barrier layer is smaller than the refractive index In the transparent plastic film" as claimed.

With regard to claim 4, Sakai et al. teach that aluminum oxide may be used in combination with silicon oxide [0032]. The Examiner clearly envisages forming a 1 to 1 ratio of silicon oxide and aluminum oxide. The bulk dielectric constant of a mixture of compounds will inherently be a weighted average of the individual dielectric constants. A 1 to 1 mixture of silicon oxide and aluminum oxide will inherently have a dielectric constant of 1.565. Such a gas barrier layer will continue to meet the limitations of claim 1 concerning the refractive index gradient within the layer order of resin sheet, gas barrier film, and conducting film.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 2, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai et al. (JP 10-309770), machine translation previously included, as evidenced by applicants' own admissions, as applied to claim 1, in view of Yuasa et al. (JP2000-192246).

With regard to claims 2, 18, and 19, Sakai et al. disclose all of the limitations of applicants' claim 1 in section 7 above. Additionally, they teach that titanium oxide is a possible compound that may be used for the gas barrier film [0032]; however, they fail to disclose with regard to the resin sheet/gas barrier film/conducting film structure of claim 2 that the gas barrier layer has a refractive index that continuously or stepwise decreases from a surface being in contact with the transparent conductive layer to a surface being in contact with the transparent plastic film.

Yuasa et al. teach that it is known to vary the percentage of silicon dioxide and titanium dioxide within a functionally gradient optical film [0012], [0035], and [0069].

Since Sakai et al. and Yuasa et al. are both drawn to optical materials; it would have been obvious to one having ordinary skill in the art at the time the invention was made to have designed the gas barrier layer of Sakai et al. to be a gradient gas barrier film of silicon oxide and titanium oxide as taught by Yuasa et al. It would have been obvious to one having ordinary skill in the art to have designed the gas barrier film to be a gradient optical film, wherein the refractive indices on either surface of the gas barrier film matched that of the layer adjacent to that surface. Such a construction would have been obvious because one of ordinary skill would have recognized that matching of the refractive index at boundary regions would have reduced thermal stress such that the optical film did not crack; furthermore, there would be less reflection of light at such a boundary regions.

With specific regard to claim 19, the reason it would have been obvious to have used titanium dioxide and silicon dioxide as the two gas barrier materials in the gradient

gas barrier layer is that they possess indices of refraction that would enable them to match the indices of refraction of the adjacent layers; furthermore, they are both inexpensive materials.

10. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai et al. (JP 10-309770), machine translation previously included, as evidenced by applicants' own admissions, as applied to claim 1, in view of Ito et al. (JP 2003-303520).

Sakai et al. disclose all of the limitations of applicants' claim 1 in section 7 above; however, they do not teach a transparent plastic film comprised of cellulose acetate or that the transparent plastic film has a glass transition temperature of 180 °C or more.

Ito et al. disclose a transparent conducting film, which reads on applicants' transparent conductive film and the transparent electric conduction sheet of Sakai et al. Ito et al. teach that their substrate, which reads on applicants' transparent plastic film or the resin sheet of Sakai et al., may be formed from an acrylic resin or a cellulose triacetate resin [0110].

Since Sakai et al. and Ito et al. are both drawn to transparent conducting films; it would have been obvious to one having ordinary skill in the art at the time the invention was made to have substituted the acrylic resins of Sakai et al. with cellulose triacetate resins of Ito et al. The results of such a substitution would have been predictable to one having ordinary skill as these resins are recognized equivalents by Ito et al. The resulting structure a resin sheet (1.47-1.51), a gas barrier film (1.67), and a conducting

film (2.05) would continue to intrinsically satisfy the refractive index limitations of claim 1.

With regard to claim 7, cellulose triacetate will intrinsically possess a glass transition temperature of 180 °C or more as evidenced by applicants' own admissions at (page 41, lines 1-11).

11. Claims 1, 3, and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai et al. (JP 10-309770), machine translation previously included, as evidenced by applicants' own admissions, in view of Van der Werf et al. (4,568,140).

While the Examiner maintains that Sakai et al. clearly envisage embodiments that intrinsically satisfy the refractive index limitations of claims 1 and 3, it is recognized that Sakai et al. do not specifically set forth that the clearly envisaged materials should be chosen to satisfy the refractive index limitations of claims 1 and 3.

With regard to claims 1 and 3, Sakai et al. disclose a transparent electric conduction sheet, which reads on applicants' transparent conductive film, for display devices [0001]. The article is comprised of a gas barrier film, which reads on applicants' gas barrier layer, a hardenability resin sheet, which reads on applicants' transparent plastic film, and a conducting film, which reads on applicants' transparent conductive layer [0009]. Sakai et al. disclose that the resins of Formula (1) and Formula (2) may be used by itself to form a sheet [0016]. Sakai et al. teach that a sheet formed from the resin of Formula (1) will have an index of refraction of 1.54-1.65 and a sheet formed from the resin of Formula (2) will have an index of refraction of 1.47-1.51 [0016]. The

gas barrier film may be formed from the inorganic oxides seen at [0032]. Sakai et al. teach that aluminum oxide or silicon oxide may be used alone as the gas barrier film. As evidenced by applicants' own admissions aluminum oxide has a refractive index of 1.67 and silicon oxide has a refractive index of 1.46 (page 22, lines 1-4). Sakai et al. also teach that the conducting film may be ITO [0031]. As evidenced by applicants' own admissions, ITO has an index of refraction of 2.05 (page 13, lines 25-27).

Sakai et al. teach at [0048] that the order of the layers is not limited and may be "a gas barrier film between a hardenability resin sheet and a conducting film," or a resin sheet in between the gas barrier film and the conducting film, i.e. the arrangement of claim 3; however, Sakai et al. do not specifically set forth that the materials for the resin sheet, gas barrier film, and conducting film should be chosen to satisfy the refractive index limitations of claims 1 and 3.

Van der Werf et al. teach that antireflection coatings should have the materials chosen such that the substrate material would have an index of refraction that is as high as possible and a surface layer that is as low as possible (col. 5, lines 1-12). This is done to ensure that the reflection curves are as low as possible, i.e. the least amount of reflection, and that these low reflection values are achieved over the widest possible range of wavelengths.

Since Sakai et al. and Van der Werf et al. are both drawn to optimal materials; it would have been obvious to one having ordinary skill in the art at the time the invention was made to have designed the two embodiments of Sakai et al., i.e. the resin sheet/gas barrier film/conducting film structure and the gas barrier film/resin

sheet/conducting film structure, with a continuous or stepwise decrease of refractive index from the conducting film to the other side of the transparent conductive film. One of ordinary skill would recognize that the conductive film of the transparent conductive film would be located furthest away from a viewer of the laminate. The reason to have the refractive index decrease continuously or stepwise is for the same reason as explicitly taught by Van der Werf et al., which is to ensure that the reflection curves are as low as possible, i.e. the least amount of reflection, and that these low reflection values are achieved over the widest possible range of wavelengths (col. 5, lines 1-12).

With regard to claim 4, Sakai et al. teach that aluminum oxide may be used in combination with silicon oxide [0032]. The Examiner clearly envisages forming a 1 to 1 ratio of silicon oxide and aluminum oxide. The bulk dielectric constant of a mixture of compounds will inherently be a weighted average of the individual dielectric constants. A 1 to 1 mixture of silicon oxide and aluminum oxide will inherently have a dielectric constant of 1.565. Such a gas barrier layer will continue to meet the limitations of claim 1 concerning the refractive index gradient within the layer order of resin sheet, gas barrier film, and conducting film.

Alternatively, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have made a gas barrier layer with aluminum oxide in combination with silicon oxide in any ratio such that the refractive index would continue to decrease continuously or stepwise from the transparent conductive layer to the other surface of the transparent conductive film as claimed. The motivation to use aluminum oxide in combination with silicon oxide is that it provides the best barrier

properties [0032]. The motivation to maintain the index of refraction is for the same reason as taught by Van der Werf et al. at col. 5, lines 1-12.

12. Claims 2, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai et al. (JP 10-309770), machine translation previously included, as evidenced by applicants' own admissions, in view of Van der Werf et al. (4,568,140), as applied to claim 1, and further in view of Yuasa et al. (JP2000-192246).

With regard to claims 2, 18, and 19, Sakai et al. in view of Van der Werf et al. render obvious all of the limitations of applicants' claim 1 in section 11 above. Additionally, Sakai et al. teach that titanium oxide is a possible compound that may be used for the gas barrier film [0032]; however, they fail to disclose with regard to the resin sheet/gas barrier film/conducting film structure of claim 2 that the gas barrier layer has a refractive index that continuously or stepwise decreases from a surface being in contact with the transparent conductive layer to a surface being in contact with the transparent plastic film.

Yuasa et al. teach that it is known to vary the percentage of silicon dioxide and titanium dioxide within a functionally gradient optical film [0012], [0035], and [0069].

Since Sakai et al. in view of Van der Werf et al. and Yuasa et al. are drawn to optical materials; it would have been obvious to one having ordinary skill in the art at the time the invention was made to have designed the gas barrier layer of Sakai et al. in view of Van der Werf et al. to be a gradient gas barrier film of silicon oxide and titanium oxide as taught by Yuasa et al. It would have been obvious to one having ordinary skill

in the art to have designed the gas barrier film to be a gradient optical film, wherein the refractive indices on either surface of the gas barrier film matched that of the layer adjacent to that surface. Such a construction would have been obvious because one of ordinary skill would have recognized that matching of the refractive index at boundary regions would have reduced thermal stress such that the optical film did not crack; furthermore, there would be less reflection of light at such a boundary regions.

With specific regard to claim 19, the reason it would have been obvious to have used titanium dioxide and silicon dioxide as the two gas barrier materials in the gradient gas barrier layer is that they possess indices of refraction that would enable them, in proper ratios, to match the indices of refraction of the adjacent layers; furthermore, they are both inexpensive materials.

13. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai et al. (JP 10-309770), machine translation previously included, as evidenced by applicants' own admissions, in view of Van der Werf et al. (4,568,140) as applied to claim 1 above, and further in view of Ito et al. (JP 2003-303520).

Sakai et al. in view of Van der Werf et al. render obvious all of the limitations of applicants' claim 1 in section 11 above; however, they do not teach a transparent plastic film comprised of cellulose acetate or that the transparent plastic film has a glass transition temperature of 180 °C or more.

Ito et al. disclose a transparent conducting film, which reads on applicants' transparent conductive film and the transparent electric conduction sheet of Sakai et al.

in view of Van der Werf et al. Ito et al. teach that their substrate, which reads on applicants' transparent plastic film or the resin sheet of Sakai et al. in view of Van der Werf et al., may be formed from an acrylic resin or a cellulose triacetate resin [0110].

Since Sakai et al. in view of Van der Werf et al. and Ito et al. are drawn to transparent conducting films; it would have been obvious to one having ordinary skill in the art at the time the invention was made to have substituted the acrylic resins of Sakai et al. in view of Van der Werf et al. with cellulose triacetate resins of Ito et al. The results of such a substitution would have been predictable to one having ordinary skill as these resins are recognized equivalents by Ito et al. The resulting structure of a resin sheet (1.47-1.51), a gas barrier film (1.67), and a conducting film (2.05) would continue to satisfy the refractive index limitations of claim 1.

With regard to claim 7, cellulose triacetate will intrinsically possess a glass transition temperature of 180 °C or more as evidenced by applicants' own admissions at (page 41, lines 1-11).

Response to Arguments

14. Applicant's arguments, see Remarks, filed 10/15/2009, with respect to the objections to the claims, the rejection of claims 1-4, 7, 8, and 18 under 35 U.S.C. 112, second paragraph, and the rejections based upon the Ito et al. reference have been fully considered and are persuasive. The relevant objections/rejections have been withdrawn.

Applicants pointed out in their Remarks that Ito et al. had a primer layer in their transparent conducting film structure. Given the refractive index of the cellulose triacetate and the primer layer would not necessarily have led to a refractive index that "continuously or stepwise decreases from one of the two surfaces of the transparent conductive film having the transparent conductive layer to the other of the two surfaces of the transparent conductive film" the Examiner has withdrawn his rejection under 35 U.S.C. 102(b) using Ito et al.

Please note that the Examiner is ***requiring*** the specification amendment filed 04/24/2009 to be re-filed because it does not agree with the corrected translation of the original specification filed on 06/10/2009. The specification amendment filed 04/24/2009 has not been entered due to this discrepancy.

15. Applicant's arguments with respect to claims 1-4, 7, 8, 18, and 19 have been considered but are moot in view of the new ground(s) of rejection.

Insofar as applicants' Remarks are valid against the current rejections they will now be addressed.

Applicants argue that Yuasa are "silent with respect to a transparent conductive film having a gas barrier layer."

The Examiner first notes that applicants appear to be arguing the references individually, where the rejection is based upon the combination of references. Yuasa et al. is used to teach that it is known to vary the percentage of silicon dioxide and titanium dioxide within a functionally gradient optical film [0012], [0035], and [0069]. The

Examiner maintains that the combination of Yuasa with Sakai et al. remains proper because it would have been obvious to one having ordinary skill in the art to have designed the gas barrier film to be a gradient optical film, wherein the refractive indices on either surface of the gas barrier film matched that of the layer adjacent to that surface. Such a construction would have been obvious because one of ordinary skill would have recognized that matching of the refractive index at boundary regions would have reduced thermal stress such that the optical film did not crack; furthermore, there would be less reflection of light at such a boundary regions.

The declaration under 37 CFR 1.132 filed 10/15/2009 is insufficient to overcome the rejections set forth in the last Office action because the Examiner has withdrawn the previous rejections based upon the fact that the primer layer was not considered in the anticipation rejection of Ito et al. and the fact that there is not enough evidence to establish that Ito et al. would have inherently met the refractive index arrangement of claim 1. Applicants' declaration is also ineffective because it is not comparing the closest prior art identified by the Examiner from Ito et al. Applicants are using the layer structure of sample 101; however, this is not the closest prior art because the transparent plastic film of that sample is PET (refractive index = 1.60), while Ito et al. clearly teach cellulose acetate as a transparent plastic film in their layer structure. The Examiner also clearly envisaged a 1 to 1 ratio of silicon oxide and titanium oxide as the barrier layer; however, the barrier layer of sample 101 is a form of silicon oxide.

The Examiner has made new rejections based upon Sakai et al. which explicitly sets forth materials and layers that inherently meet applicants' claimed refractive index

limitations; furthermore, the Examiner has rendered such limitations obvious utilizing Van der Werf et al.

The fact that applicants are relying upon the limitation of claim 1 stating that the “refractive index is controlled” is not a convincing argument because the Examiner has clearly envisaged the materials that inherently satisfy the refractive index limitations of claims 1 and 3. Such clearly envisaged materials would inherently have to have been manufactured into a laminate structure; further, such a manufacturing process reads on applicants' requirement that the “refractive index is controlled” to continuously or stepwise decrease in the manner set forth in claims 1 and 3.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Examiner has cited US 4,977,013 which is a basic transparent conductive coating, US 5,648,147 which teaches that index of refraction and hardness are inversely proportional, and therefore a surface layer of an optical film should have a low index of refraction because therefore it would be harder and less likely to scratch or crack, and US 5,667,880 which shows conventional antireflection films.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GERARD T. HIGGINS whose telephone number is (571)270-3467. The examiner can normally be reached on M-Th 10am-8pm est. (Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Ruthkosky can be reached on 571-272-1291. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Ruthkosky/
Supervisory Patent Examiner, Art Unit 1794

GERARD T. HIGGINS
Examiner
Art Unit 1794

/G. T. H./
Examiner, Art Unit 1794